

**REMARKS**

Table 1 documents support in the Applicants' specification for features claimed herein by the present amendment.

Table 1

Claims	Support in Specification
1, 18, 41	page 16, lines 2-5; page 18, lines 19-23; page 23, lines 9-12
14, 37, 46	page 21, lines 23-25
44	page 25, line 25
47	page 26, lines 1-17
51, 63, 75	page 17, line 22 - page 18, line 8
52, 64, 76	page 18, lines 19-23
53, 65, 77	page 16, lines 2-5
54, 66, 78	page 20, lines 8-17
55, 67, 79	page 17, lines 23-24
56, 68, 80	page 16, line 31 - page 17, line 6
57, 69, 81	page 17, lines 6-15
58, 70, 82	page 22, lines 18-21
59, 71, 83	page 21, lines 3-5
60, 72, 84	page 22, lines 26-28
61, 73, 85	page 23, lines 2-5
62, 74, 86	page 23, lines 12-17

The Examiner rejected claims 1, 5, 8, 14, 18-22, 25, 26, 28, 31, 37, 39, 41, 44 and 46-50 under 35 U.S.C. §102(e) as allegedly anticipated by or, in the alternative, under 35 U.S.C.

§103(a) as allegedly obvious over Shiobara *et al.* (6,376,100 B1).

The Examiner rejected claims 1, 5, 6, 8, 23, 24, 27, 29 and 43 under 35 U.S.C. §103(a) as allegedly being unpatentable over Christie *et al.* (5,668,059) in view of Shiobara *et al.* (6,376,100 B1).

Applicants respectfully traverse the §102 and §103 rejections with the following arguments.

**35 U.S.C. §102(e) and §103(a)**

The Examiner rejected claims 1, 5, 8, 14, 18-22, 25, 26, 28, 31, 37, 39, 41, 44 and 46-50 under 35 U.S.C. §102(e) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly obvious over Shiobara *et al.* (6,376,100 B1).

Since claims 5, 8, 19-22, 25, 26, 28, 31, 39, and 48-50 have been canceled, the rejection of 5, 8, 19-22, 25, 26, 28, 31, 39, and 48-50 over Shiobara under 35 U.S.C. §102(e) or 35 U.S.C. §103(a) is moot.

Applicants respectfully contend that claims 1, 18, and 41 are not unpatentable over Shiobara, because Shiobara does not teach or suggest each and every feature of claims 1, 18, and 41. For example, Shiobara does not teach or suggest the feature: "wherein the composition has a higher fracture toughness, a lower viscosity, increased thermal shock resistance at a temperature excursion below -40 °C, or combinations thereof than the composition would have if the flexibilizing agent were not present in the composition".

The Examiner argues that Shiobara's stress reducer is a flexibilizing agent.

In response, Applicants respectfully contend that irrespective of whether Shiobara's stress reducer is a flexibilizing agent, Shiobara does not teach or suggest that "the composition has a higher fracture toughness, a lower viscosity, increased thermal shock resistance at a temperature excursion below -40 °C, or combinations thereof than the composition would have if the flexibilizing agent were not present in the composition".

Based on the preceding arguments, Applicants respectfully maintain that claims 1, 18, and 41 are not unpatentable over Shiobara, and that claims 1, 18, and 41 are in condition for allowance. Since claim 14 depends from claim 1, Applicants contend that claim 14 is likewise in

condition for allowance. Since claim 37 depends from claim 18, Applicants contend that claim 37 is likewise in condition for allowance. Since claims 44 and 46-47 depend from claim 41, Applicants contend that claims 44 and 46-47 are likewise in condition for allowance.

35 U.S.C. §103

The Examiner rejected claims 1, 5, 6, 8, 23, 24, 27, 29 and 43 under 35 U.S.C. §103(a) as allegedly being unpatentable over Christie *et al.* (5,668,059) in view of Shiobara *et al.* (6,376,100 B1).

Since claims 5, 6, 8, 23, 24, 27, and 29 have been canceled, the rejection of 5, 6, 8, 23, 24, 27, and 29 under 35 U.S.C. §103(a) over Christie in view of Shiobara is moot.

Applicants respectfully contend that claim 1 is not unpatentable over Christie in view of Shiobara, because Christie in view of Shiobara does not teach or suggest each and every feature of claim 1.

As a first example of why Christie in view of Shiobara does not teach or suggest each and every feature of claim 1, Christie in view of Shiobara does not teach or suggest the feature: "wherein the composition has a higher fracture toughness, a lower viscosity, increased thermal shock resistance at a temperature excursion below -40 °C, or combinations thereof than the composition would have if the flexibilizing agent were not present in the composition".

Although Christie, col. 11, lines 14-33 discloses a flexibilizer that imparts thermal shock resistance, Christie does not disclose a flexibilizer that imparts thermal shock resistance at a temperature excursion below -40 °C.

As to Shiobara, the Examiner argues that Shiobara's stress reducer is a flexibilizing agent. In response, Applicants respectfully contend that irrespective of whether Shiobara's stress reducer is a flexibilizing agent, Shiobara does not teach or suggest that "the composition has a higher fracture toughness, a lower viscosity, increased thermal shock resistance at a temperature

excursion below -40 °C, or combinations thereof than the composition would have if the flexibilizing agent were not present in the composition”.

As a second example of why Christic in view of Shiobara does not teach or suggest each and every feature of claim 1, Christic in view of Shiobara does not teach or suggest the feature: “a flexibilizing agent comprising 2 percent to about 5 percent by weight of said composition”.

The Examiner argues: “Christic et al. do not appear to disclose an amount of flexibilizer as instantly claimed.... Shiobara et al. disclose ... a flexibilizing agent selected from the group as instantly claimed (col.9, line 12-col.12, line 61), comprising 2 to 15 parts by weight of the composition (col.12, lines 57-61).... Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added flexibilizer in an amount included in applicant's range, as taught by Shiobara et al., to the resin composition of Christic et al. because Shiobara et al. teach that the addition of more flexibilizer further reduces the stress in the composition, resulting in a more effective and higher quality composition. ”

In response, Applicants will next demonstrate that the preceding argument by the Examiner is contradicted by the teachings of Christie, and that 2 percent to about 5 percent weight percent of flexibilizing agent would violate fundamental concepts of Christie's invention, as explained next.

On page 3 of a previous office action mailed 11/08/2002, the Examiner presented a calculation showing that the maximum weight percent of the flexibilizing agent in the composition is 1.6%, based on Christie's disclosure that the maximum weight percent of the epoxy binder in the composition is 80% and the maximum weight percent of the flexibilizing

agent in the epoxy binder is 2% (i.e.,  $80\% \times 2\% = 1.6\%$ ). Therefore, in order for the maximum weight percent of the flexibilizing agent in the composition to be as high as 2%, then either the maximum weight percent of the epoxy binder in the composition must sufficiently exceed 80% or the maximum weight percent of the flexibilizing agent in the epoxy binder must sufficiently exceed 2%, or both. However, the maximum weight percent of the epoxy binder in the composition cannot exceed 80%, because to do so would force the filler weight composition to be less than 20%, and Christie requires the filler to have a minimum weight percent of 20% in the composition (see Christie, col. 10, lines 10-14).

Therefore, in order for the maximum weight percent of the flexibilizing agent in the composition to be as high as 2%, the weight percent of the flexibilizing agent in the epoxy binder would have to be 2.5% (i.e.,  $80\% \times 2.5\% = 2\%$ ). However, Christie utilizes the flexibilizing agent in the epoxy binder to impart desirable mechanical properties to the composition such as flexibility and thermal shock resistance, and Christie identifies this utility of the flexibilizing agent with a range of 0.7% to 2% weight percent in the epoxy binder (see Christie, col. 11, lines 14-24). Since Christie specifically discloses that 0.7% to 2% is the disclosed range of weight percent to achieve the preceding benefit of the flexibilizing agent, a person of ordinary skill in the art would have no reason to modify Christies invention to use 2.5% as the weight percent. Appellant notes that 2.5% is not only outside of the disclosed 0.7% to 2% range, but is 20% higher than the upper end of 2% of the disclosed 0.7% to 2% range, which represents a major percentage deviation from the flexibilizer range disclosed by Christie for the purpose of imparting desirable mechanical properties to the composition.

As a third example of why Christie in view of Shiobara does not teach or suggest each and every feature of claim 1, Christie in view of Shiobara does not teach or suggest the feature: "a filler material comprising substantially spherical or spheroidal particles, each particle having a diameter of less than about 41 microns".

The Examiner argues: "Christie et al. do not appear to disclose .... a substantially spheroidal or spherical filler.... Shiobara et al. disclose ... a filler material comprising substantially spheroidal particles, with a maximum particle size included in applicant's range (col.3, lines 20-35).... Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used spheroidal or spherical filler particles, as taught by Shiobara et al., in the resin composition of Christie et al., because Shiobara et al. teach that the resin composition, which is being applied as an underfill (the same use as that of applicant), because the use of spherical or spheroidal particles would improve the flow of the resin into the underfill area of the component, thereby reducing friction of flow, resulting in a higher quality and more effective underfill composition."

In response, Applicants respectfully contend that the Examiner's argument is not persuasive, because the Examiner has not provided any evidence to support the Examiner's allegation that "the use of spherical or spheroidal particles would improve the flow of the resin into the underfill area of the component, thereby reducing friction of flow".

Based on the preceding arguments, Applicants respectfully maintain that claim 1 is not unpatentable over Christie in view of Shiobara, and that claim 1 is in condition for allowance.



CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account No. 09-0457.

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